

IN THE CLAIMS

Please amend the claims to be in the form as follows:

Claim 1 (currently amended): A method of operating a device for determining a best-case response time of a first periodic task performed within the device, the method comprising:
 a first step of determining that the first periodic task performed within the device has a lower priority than a higher priority of a second periodic task,
 characterized in that the method further comprises:
 a second step of determining that the best-case response time of the first periodic task is substantially equal to the difference between a start of the first periodic task and a completion of the first periodic task, the start being right after a release of the first periodic task and the completion coinciding with a release of the second periodic task.

Claim 2 (original): A method of determining a best-case response time of a first periodic task according to claim 1, wherein BR_i denotes the best-case response time of the first periodic task, BR_i being substantially equal to the largest value that satisfies:

$$BC_i + \sum_{j \in hp(i)} \left(\left\lceil \frac{BR_i}{T_j} \right\rceil - 1 \right) BC_j$$

wherein BC_i denotes a best-case computation time of the first periodic task τ_i , $hp(i)$ denotes a set of tasks with a higher priority than the lower priority, T_j denotes a period of activation of a task j of $hp(i)$.

Claim 3 (original): A method of determining a best-case response time of a first periodic task according to claim 2, wherein WR_i denotes a worst-case response time of the first periodic task τ_i and the best-case response time BR_i can be found by an iterative procedure of k iterations, where $k = 0, 1, \dots$ comprising:

$$\begin{aligned} BR_i(0) &= WR_i, \\ BR_i(k+1) &= BC_i + \sum_{j \in hp(i)} \left(\left\lceil \frac{BR_i(k)}{T_j} \right\rceil - 1 \right) BC_j \end{aligned}$$

wherein the iterative procedure terminates when the same value is found for two successive iterations of k .

Claim 4 (original): A method of determining a best-case response time of a first periodic task according to Claim 3, wherein the worst-case response time of the first periodic task is based upon a worst-case computation time of the first periodic task.

Claim 5 (original): A method of determining a best-case response time of a first periodic task according to Claim 3, wherein the worst-case response time of the first periodic task is based upon a best-case computation time of the first periodic task.

Claim 6 (original): A method of determining a best-case response time of a first periodic task according to claim 3, wherein RJ_i denotes a release jitter of the first periodic task τ_i , the release jitter being a variation in the release of the first periodic task and the release jitter having a negative contribution to the best-case response time:

$$BR_i(0) = WR_i$$

$$BR_i(k+1) = BC_i + \sum_{j \in \text{ch}_p(i)} \left(\left\lceil \frac{BR_i(k) - RJ_j}{T_j} \right\rceil - 1 \right) BC_j$$

wherein x^+ denotes the maximum of 0 and x .

Claim 7 (currently amended): A system for determining a best-case response time of a first periodic task performed within the system, the system comprising:

determination means conceived to determine that the first periodic task performed within the system has a lower priority than a higher priority of a second periodic task, characterized in that the system further comprises:

response time means conceived to determine that the best-case response time of the first periodic task is substantially equal to the difference between a start of the first periodic task right after its release and a completion of the first periodic task that coincides with a release of the second periodic task.

Claim 8 (original): A system (800) of determining a best-case response time of a first periodic task according to claim 7, the system further comprising first calculation means (802) conceived to calculate the best-case response time denoted by BR_i according to the following formula:

$$BR_i = BC_i + \sum_{j \in hp(i)} \left(\left\lceil \frac{BR_i}{T_j} \right\rceil - 1 \right) BC_j$$

wherein BC_i denotes a best-case computation time of the first periodic task τ_i , $hp(i)$ denotes a set of tasks with a higher priority than the priority of the first periodic task, T_j denotes a period of activation of a task j of $hp(i)$, and BR_i denotes the best-case response time of the first periodic task.

Claim 9 (original): A system (800) of determining a best-case response time of a first periodic task according to claim 8, the system further comprising second calculation means (804) conceived to calculate the best-case response time denoted by BR_i according to the following iterative procedure of k iterations, where $k = 0, 1, \dots$:

$$BR_i(0) = WR_i$$

$$BR_i(k+1) = BC_i + \sum_{j \in hp(i)} \left(\left\lceil \frac{BR_i(k)}{T_j} \right\rceil - 1 \right) BC_j$$

wherein WR_i denotes a worst-case response time of the first periodic task τ_i and the iterative procedure terminates when the same value is found for two successive iterations of k .

Claim 10 (original): A system (800) of determining a best-case response time of a first periodic task according to claim 7, the system further comprising third calculation means (806) conceived to calculate the best-case response time denoted by BR_i corrected for a release jitter, the release jitter being a variation in the release of the first periodic task:

$$BR_i(0) = WR_i$$

$$BR_i(k+1) = BC_i + \sum_{j \in hp(i)} \left(\left\lceil \frac{BR_i(k) - RJ_j}{T_j} \right\rceil - 1 \right)^+ BC_j$$

wherein RJ_j denotes the release jitter of the first periodic task τ_i , and x^+ denotes the maximum of 0 and x .

Claim 11 (previously presented): A computer program product arranged to perform the method according to Claim 1.

Claim 12 (original): A storage device (812) comprising a computer program product according

to Claim 11.

Claim 13 (previously presented): A television set (910) comprising a system according to Claim 7.

Claim 14 (previously presented): A set-top box (1002) comprising a system according to Claim 7.

Claim 15 (previously presented): The set-top box of Claim 14 wherein system determines from the best-case response time of the first periodic task and a worst case response time of the first periodic task if a signal can be used by the system.

Claim 16 (previously presented): The television set of Claim 13 wherein system determines from the best-case response time of the first periodic task and a worst case response time of the first periodic task if a signal can be used by the system.

Claim 17 (previously presented): A set-top box arranged to perform the method according to Claim 1 wherein the method determines from the best-case response time of the first periodic task and a worst case response time of the first periodic task if a signal can be used by the set-top box.

Claim 18 (previously presented): The television set arranged to perform the method according to Claim 1 wherein method determines from the best-case response time of the first periodic task and a worst case response time of the first periodic task if a signal can be used by the television set.

Claim 19 (new): The system of Claim 7, wherein the determination means determines that the first periodic task has the lower priority than a plurality of other tasks and the response time means determines that the best-case response time of the first periodic task is substantially equal to the difference between the start of the first periodic task and the completion of the first periodic task, the start being right after the release of the first periodic task and the completion

coinciding with a release of the plurality of other periodic tasks.

Claim 20 (new): The method of Claim 1, wherein the first step of determines that the first periodic task has the lower priority than a plurality of other tasks and the second step determines that the best-case response time of the first periodic task is substantially equal to the difference between the start of the first periodic task and the completion of the first periodic task, the start being right after the release of the first periodic task and the completion coinciding with a release of the plurality of other periodic tasks.